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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 13, 2012

Mr. Gary G. Miller
Remedial Project Manager
U.S. EPA, Region 6
Superfund Division (6SF-RA)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733



Re: *Revised Baseline Ecological Risk Assessment (BERA)*, dated August, 2012
San Jacinto River Waste Pits Federal Superfund Site
Harris County, Texas

Dear Mr. Miller:

The Texas Commission on Environmental Quality (TCEQ) Remediation Division has completed review of the *Revised Baseline Ecological Risk Assessment (BERA)*, dated August 22, 2012 for the San Jacinto River Waste Pits Federal Superfund site. The TCEQ also has reviewed the responses to the TCEQ comments on the March 2012 draft of this document (i.e., Appendix F). With the exception of the response to comment 47 related to the potential risks to molluscs exposed to dioxin/furans, the TCEQ is generally satisfied with the responses to the comments and the revised risk assessment. With the exception of the mollusc evaluation (see new comment 1), the comments below generally refer to minor typographical or editorial errors. These comments also reflect input from Dr. Linda Broach of the TCEQ Houston office.

1. The TCEQ disagrees (in part) with the response to comment 47 and the corresponding revisions to Sections 5.3, 6.2.3, and Appendix B. Regarding reproductive risks for molluscs, our comment had suggested that an no-observed-adverse-effects concentration (NOAEC) of 2 ng TCDD/kg ww tissue is too high as this concentration has been found to adversely affect early stages of oyster gametogenesis (Wintermyer and Cooper (2007)) and veliger larval survival (Cooper and Wintermyer (2009)). We had suggested that the 2 ng TCDD/kg ww tissue concentration should be the lowest-observed-adverse-effect concentration (LOAEC), and a lower NOAEC should be determined based on an appropriate literature value. The comment response indicates that the concentration of 2 ng TCDD/kg tissue will be considered the lowest-observed-adverse-effect level (LOAEL) in the revised BERA (as was reflected in revisions to Sections 5.3 and 6.2.3 and Table B-4).

However, the response to comment and the revised BERA (Sections 5.3, 6.2.3, and Appendix B (Section 2.1.1)) disagrees with Cooper and Wintermyer (2009), which cites Wintermyer and Cooper (2003) to support a conclusion that 2 ng/kg TCDD in

eastern oysters (*Crassostrea virginica*) causes reduction in veliger larval survival. The response to comment and the revised BERA state that this likely overstates the effect of TCDD since Wintermyer and Cooper (2003) used test subjects that were field-collected and field-exposed (and hence were exposed to pollutants other than TCDD). The revised BERA states that Cooper and Wintermyer's (2009) conclusion that 2 ng/kg in bivalves reduces larval survival is not used to support this risk assessment; rather 2 ng/kg is considered the LOAEL for effects on reproductive tissue in individual molluscs.

We do not disagree with the concern that the 2 ng/kg endpoint was based on field-exposed oysters that would have been exposed to a variety of chemicals including PCBs and other sources of anthropogenic pollutants. However, laboratory studies in Wintermyer and Cooper (2003) are relevant to this discussion. In addition to the reproduction studies of the oysters transplanted to impacted field locations in New Jersey, Wintermyer and Cooper (2003) injected (laboratory) adult oysters with tritium-labeled TCDD, and these were strip spawned after 28 days of exposure. Eggs from each treatment group were fertilized with sperm from the corresponding treatment group. The nominal concentrations were 2.0 and 20 pg/g and the concentrations in tissue were reported as 0.966 and 27.7 pg/g of ³[H]-TCDD. For both treatment groups, there was a reduction in the number of veliger larvae compared to controls. For the 2.0 pg/g treatment group, roughly half of the eggs were fertilized, and of those, there was 100% mortality within 48 hours. This lab study could be interpreted to indicate a tissue LOAEC for impaired reproduction and reduced larval survival as low as 1 pg/g.

Please revise the BERA text to address these concerns.

2. Regarding the revisions to Section 3.4.4, the full citation for the Shields 2012 reference (related to the brown pelican range) is not provided in the list of references. This should be added (it was presented in Appendix A).
3. There appears to be a typographic error in the last sentence of Section 3.4.4. The reference to Section 4.1.3.6 should be revised to state Section 4.3.1.6.
4. Regarding the response to comment 22 and the revision to Section 4.3.1.2, the link provided in the reference section for the U.S. Environmental protection Agency (EPA) paper on dioxin bioavailability is incorrect and should be revised.
5. Some table corrections are needed related to the addition of the protected species evaluation to the BERA. In Table 4-12, the "estimated size of the exposure unit" and the corresponding area use factor (AUF) value should be revised for the white-faced ibis. Additionally, columns for the brown pelican should be added to Tables 4-13 and 7-2.
6. Regarding the response to comment 67, it appears that Table 4-7 was not revised to indicate that the raccoon's fish dose was modeled for peninsula fish only. Assuming we understand the response to comment, Table 4-7 should be corrected. Additionally the comment response doesn't seem to address the last part related to

terrestrial invertebrates and plants. Table 4-7 should also be revised as appropriate to address this portion of the comment.

7. Regarding text additions in the uncertainty discussion in response to comment 52, it appears that the relevant text was added to Section 7.4 rather than Section 7.2.2.1. We suggest removing "PCBs" from the title header for Section 7.2.2.1.
8. Regarding the response to comment 45, it appears that the relevant notes were added to Table 5-1. However, the full citations for U.S. EPA (1986) and WHO (2001) were not carried forward to the reference list. These should be added to the list (they were presented in Appendix B).
9. Text was revised in Section 6.2.3 in response to comment 56. We agree that it is not possible to evaluate risks to molluscs in the vicinity of Transect 3 within the footprint of the Time-Critical Removal Action (TCRA). Nevertheless, absent tissue sampling and analysis, it is not certain that risks to molluscs outside of the footprint of the TCRA (but within the vicinity of Transect 3) have been greatly reduced as a result of the TCRA.

Appendix E – Screening Level Ecological Risk Assessment, South Impoundment

10. The document revisions look fine. As a minor comment, the Table of Contents needs to be updated to reflect the addition of Sections 2.3.1.4 and 2.4.3.

If you have any questions please contact Vickie Reat at 512-239-6873 or myself at 512-239-6368.

Sincerely,



Ludmila Voskov, P.G.
Project Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality

LV/cw

cc: Vickie Reat, TCEQ
Linda Broach, TCEQ